INCH-POUND

MS8003E
14 July 2016
SUPERSEDING
w/AMENDMENT 1
MS8003D
9 September 2005

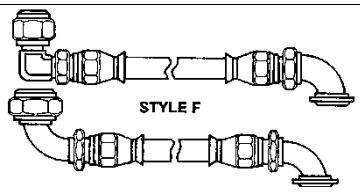
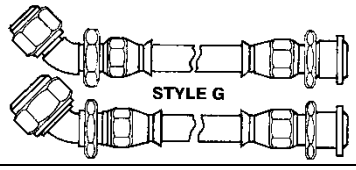
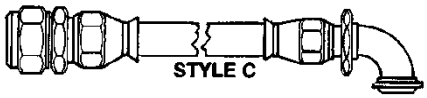
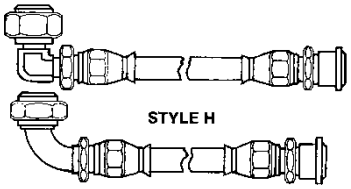
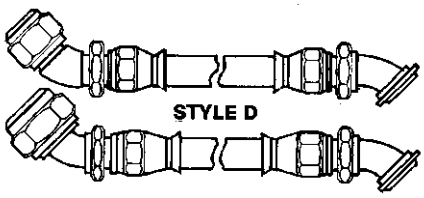
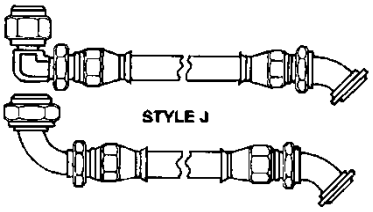
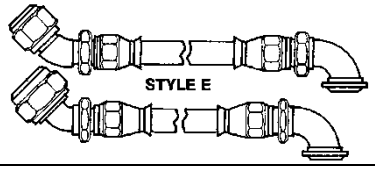
DETAIL SPECIFICATION SHEET

HOSE ASSEMBLY, POLYTETRAFLUOROETHYLENE, REUSABLE FITTINGS, HIGH TEMPERATURE, MEDIUM PRESSURE, FLARELESS-TO-FLANGE

This specification is approved for use by all
Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-25579.

Class 1 hose assemblies. Corrosion resistant steel (CRES), see figure 1.

Class 1 fittings (450°F) Corrosion resistant steel		Class 1 fittings (450°F) Corrosion resistant steel	
End 1	End 2	End 1	End 2
			
			
			
			
			

See notes at end of figure.

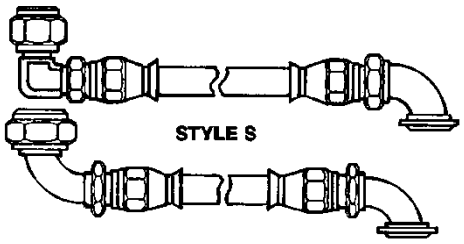
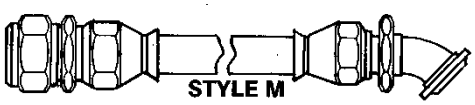
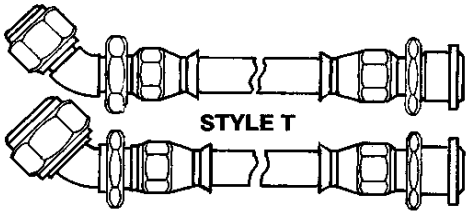
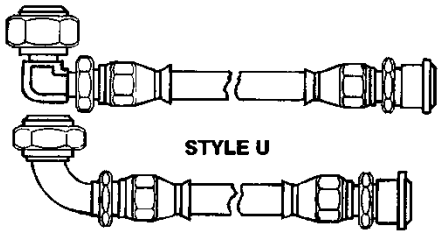
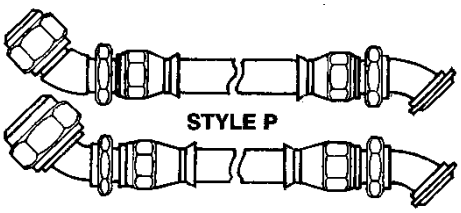
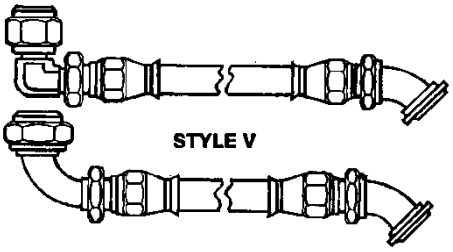
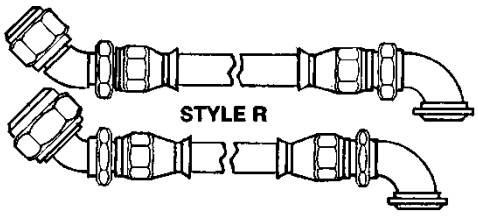
FIGURE 1. Class 1 Corrosion resistant steel (CRES) fittings.

Style CRES	Fitting ends		Hose cut-off factor (HOCF) (size vs length) (see note 3) inch (mm)					
	1	2	8	10	12	16	20	24
A	MS27381	MS27054	2.39 (60.7)	2.74 (69.6)	2.78 (70.6)	3.19 (81.0)	3.41 (86.6)	3.88 (98.5)
B	MS27381	MS27056	2.41 (61.2)	2.74 (69.6)	3.30 (83.8)	3.56 (90.4)	3.94 (100.1)	4.57 (116.1)
C	MS27381	MS27058	2.37 (60.2)	2.73 (69.3)	3.32 (84.3)	3.63 (92.2)	4.06 (103.1)	4.75 (120.1)
D	MS27384	MS27056	3.20 (81.3)					
	MS27382	MS27056		3.19 (81.3)	4.13 (104.9)	4.31 (109.5)	4.83 (122.7)	5.53 (140.5)
E	MS27384	MS27058	3.16 (80.3)					
	MS27382	MS27058		3.18 (80.8)	4.15 (105.4)	4.38 (111.3)	4.95 (125.7)	5.71 (145.0)
F	MS27385	MS27058	2.52 (64.0)					
	MS27383	MS27058		2.82 (71.6)	3.84 (97.5)	4.10 (104.1)	4.68 (118.9)	5.36 (136.1)
G	MS27384	MS27054	3.18 (80.8)					
	MS27382	MS27054		3.19 (81.0)	3.61 (91.7)	3.94 (100.1)	4.30 (109.2)	4.84 (123.9)
H	MS27385	MS27054	2.54 (64.5)					
	MS27383	MS27054		2.83 (60.5)	3.30 (83.8)	3.66 (93.0)	4.03 (102.4)	4.49 (114.0)
J	MS27385	MS27056	2.56 (65.0)					
	MS27383	MS27056		2.83 (71.9)	3.82 (97.0)	4.03 (102.4)	4.56 (115.8)	5.18 (131.6)

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. The HCOF is used in the following calculation to determine the hose length required to produce an assembly of a specific size, style and length: Assembly length - HCOF = Hose length. For example, the hose length required to produce an 30.00 inch length assembly of size 20, style F is calculated as follows: 30.00 - 4.68 = 25.32.

FIGURE 1. Class 1 Corrosion resistant steel (CRES) fittings - Continued.

Class 2 hose assemblies. Combination of aluminum and CRES, see figure 2.

Class 2 fittings (275°F) Combination aluminum and corrosion resistant steel		Class 2 fittings (275°F) Combination aluminum and corrosion resistant steel	
End 1	End 2	End 1	End 2
			
			
			
			
			

See notes at end of figure.

FIGURE 2. Class 2 aluminum and CRES fittings.

Style Al and CRES	Fitting ends		HCOF (size vs length) see note 3 inch (mm)					
	1	2	8	10	12	16	20	24
K	MS27381	MS27054	2.39 (60.7)	2.74 (69.6)	2.78 (70.6z0	3.19 (81.0)	3.41 (86.6)	3.88 (98.6)
M	MS27381	MS27056	2.41 (61.2)	2.74 (69.6)	3.30 (83.8)	3.56 (90.4)	3.94 (100.1)	4.57 (141.5)
N	MS27381	MS27058	2.37 (60.2)	2.73 (69.3)	3.32 (84.3)	3.63 (92.2)	4.06 (103.1)	4.75 (146.1)
P	MS27384	MS27056	3.20 (81.3)					
	MS27382	MS27056		3.19 (81.0)	4.13 (104.9)	4.31 (109.5)	4.83 (122.7)	5.53 (140.5)
R	MS27384	MS27058	3.16 (80.3)					
	MS27382	MS27058		3.18 (80.8)	4.15 (105.4)	4.38 (111.3)	4.95 (125.7)	5.71 (145.0)
S	MS27385	MS27058	2.52 (64.0)					
	MS27383	MS27058		2.82 (71.6)	3.84 (97.5)	4.10 (104.1)	4.68 (118.9)	5.36 (136.1)
T	MS27384	MS27054	3.18 (80.8)					
	MS27382	MS27054		3.19 (81.0)	3.61 (91.7)	3.94 (100.1)	4.30 (109.2)	4.84 (122.9)
U	MS27385	MS27054	2.54 (64.5)					
	MS27383	MS27054		2.83 (71.9)	3.30 (83.8)	3.66 (93.0)	4.03 (102.4)	4.49 (114.0)
V	MS27385	MS27056	2.56 (65.0)					
	MS27383	MS27056		2.83 (71.9)	3.82 (97.0)	4.03 (102.4)	4.56 (115.8)	5.18 (131.6)

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. The HCOF is used in the following calculation to determine the hose length required to produce an assembly of a specific size, style and length: Assembly length - HCOF = Hose length. For example, the hose length required to produce an 30.00 inch length assembly of size 10, style S is calculated as follows:

   30.00 - 2.82 =27.18.

FIGURE 2. Class 2 aluminum and CRES fittings - Continued.

REQUIREMENTS

Hose assemblies described herein shall be manufactured with fittings in accordance with MIL-DTL-27272 and hose in accordance with MIL-DTL-27267.

Hose assembly configurations shall be as specified on figures 1 and 2.

Fittings shall mate with parts designed to SAE-AS33514 and the mounting pad as shown on MS33786.

Flareless fitting, hose connector design: Use MIL-DTL-25579/1 for application of NAS 1760 design.

Hose assembly size code: See table I.

TABLE I. Hose assembly size code. 1/ 2/

Size code	Size	Reference tube OD
H	8	.500 (12.70)
J	10	.625 (15.88)
K	12	.750 (19.05)
M	16Z	1.000 (25.40)
N	20Z	1.250 (31.75)
P	24Z	1.500 (38.10)

1/ Dimensions are in inches.
2/ Metric equivalents are given for information only.

Assembly classification: Class 1 and class 2 hose assemblies, as specified in MIL-DTL-25579, have been incorporated into the Part or Identifying Number (PIN) as a part of styles (see figures 1 and 2).

Assembly length: Hose assembly shall be furnished in lengths as specified in the contract or purchase order (see MIL-DTL-25579); however, tolerances on the length of each hose assembly shall be as follows:

a. ±.125 inch (3.18 mm) for lengths under 18 inches (457 mm).
b. ±.250 inch (6.35) for lengths from 18 inches to 36 inches (457 to 914 mm).
c. ±.500 inch (12.70 mm) for lengths from 36 inches to 50 inches (457 to 1270 mm).
d. ±1% for lengths over 50 inches (1270 mm).

Protective sleeve (fire, abrasion, or chafe guard) or lock wire holes: If required, the hose assembly shall include a protective sleeve or lock wire holes (see table II) and its code shall be included in the PIN. Fire protective sleeves shall be subjected to testing in accordance with MIL-DTL-25579. Fire protective sleeve attachment, see figure 3.

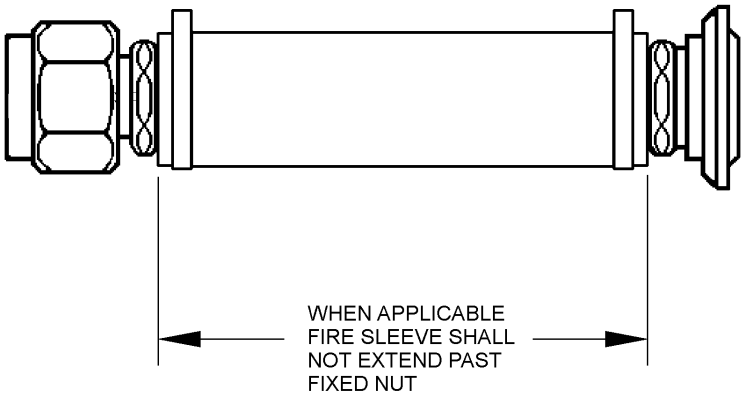


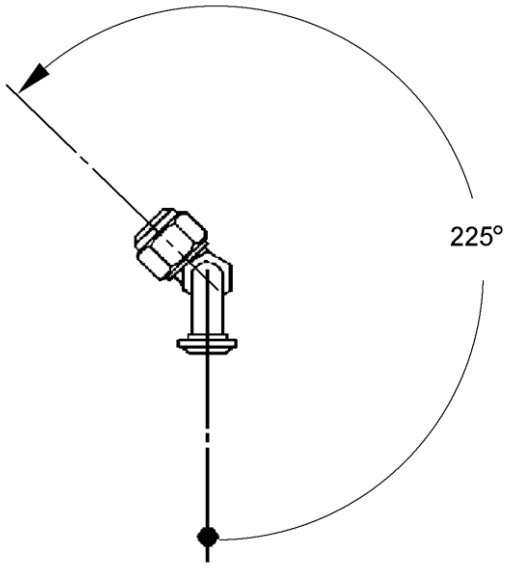
FIGURE 3. Fire protection sleeve attachment.

TABLE II. Protective sleeve and lock wire holes code.

Code	Sleeve type	Type
A	Fire	In accordance with SAE-AS1072, silicone covered, temperature ranging from -65°F to 450°F (-54°C to 232°C) and intermittently to 500°F (260°C), secured with CRES bands as required. 1/
B	Abrasion protection	In accordance with SAE-AS1073, heat shrinkable, black polyolefin, temperature ranging from -65°F to 250°F (-54°C to 121°C).
C	Chafe guard (white)	In accordance with SAE-AS1291 extruded seamless white PTFE, temperature ranging from -65°F to 450°F (-54°C to 232°C), secured with CRES bands as required.
D	Chafe guard (transparent)	In accordance with SAE-AS1291, extruded seamless transparent FEP, temperature ranging from -65°F to 350°F (-54°C to 177°C), secured with CRES bands as required.
E	Heavy wall chafe guard	In accordance with SAE-AS1298, extruded seamless black PTFE, temperature ranging from -65°F to 450°F (-54°C to 232°C), secured with CRES bands as required.
L	Not applicable	Lock-wire holes
F	Fire	Code A + L 1/
G	Abrasion protection	Code B + L
H	Chafe guard (white)	Code C + L
J	Chafe guard (transparent)	Code D + L
K	heavy wall chafe guard	Code E + L

1/ To prevent wicking of fluids, the cut end of the fire protective sleeve (codes A and F) shall be coated with Room Temperature Vulcanized (RTV) silicone rubber prior to installation. After installation, cracks and voids in the fire protective sleeve shall be coated with RTV rubber to prevent exposure of fiberglass.

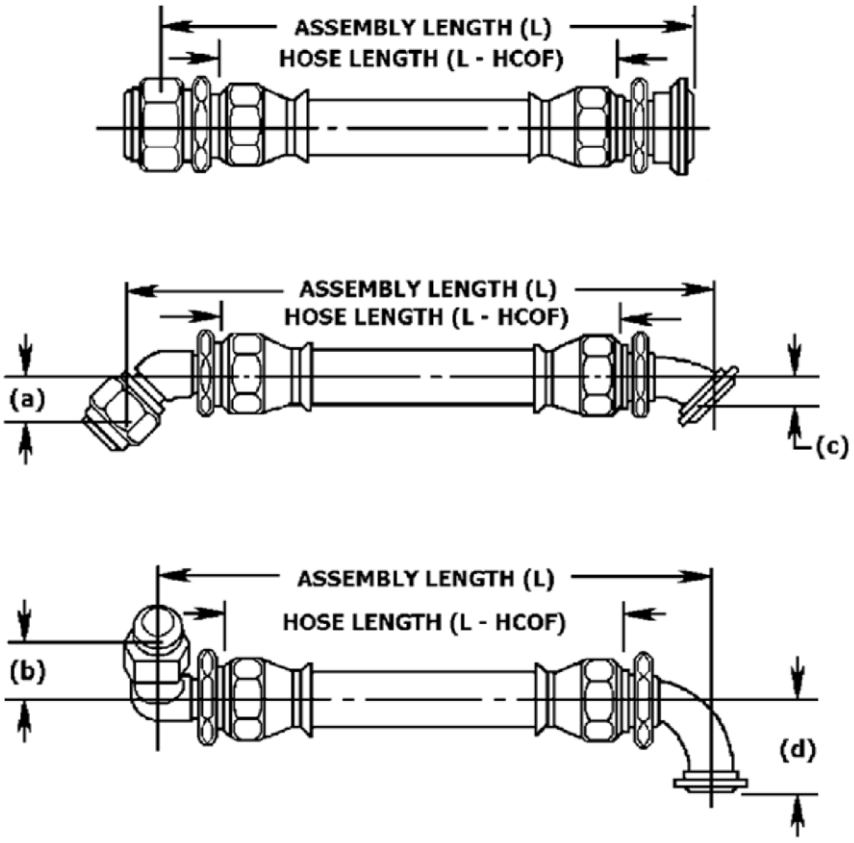
Angular alignment: Hose assemblies with elbow fittings on each end shall have the angular orientation between the elbows measured counter-clockwise from the centerline of the nearest fitting, positioned at six-o'clock, to the centerline of the other fitting (see figure 4). When applicable, the angular alignment shall be expressed in three digits and specified in the PIN.



NOTE: Angular alignment shall be measured in degrees with a tolerance of ±2°.

FIGURE 4. Measurement of angular alignment between elbow fittings.

The elbow fitting drop height shall be as shown on figure 5.

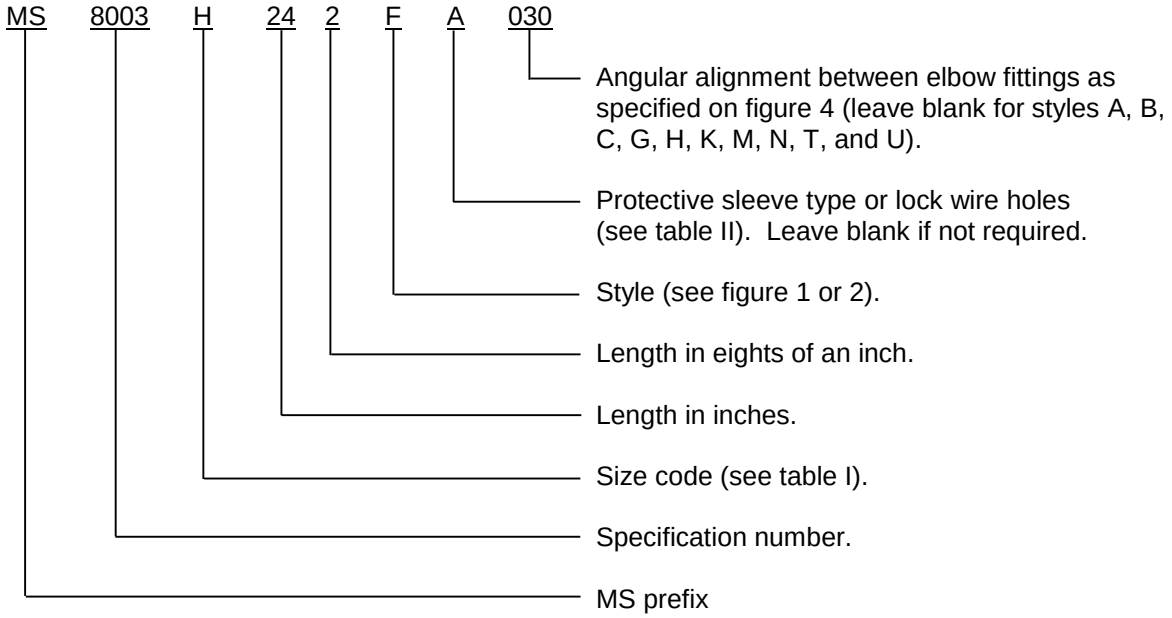


Size code	Size	Reference tube OD inch (mm)	Maximum drop height of elbow fitting inch (mm)			
			(a)	(b)	(c)	(d)
H	8	.500 (12.70)	.642 (16.30)	1.072 (27.23)	.458 (11.63)	.927 (23.55)
J	10	.625 (15.88)	.760 (19.30)	1.427 (36.25)	.410 (10.41)	.931 (23.65)
K	12	.750 (19.05)	.835 (21.21)	1.661 (42.19)	.503 (12.78)	1.191 (30.25)
M	16Z	1.000 (25.40)	.889 (22.58)	1.811 (46.00)	.540 (13.72)	1.317 (33.45)
N	20Z	1.250 (31.75)	.997 (25.32)	2.091 (53.11)	.605 (15.37)	1.535 (38.99)
P	24Z	1.500 (38.10)	1.190 (30.23)	2.473 (62.81)	.659 (16.74)	1.723 (43.76)

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Hose assembly length “L” shall be measured, with the hose laid out horizontally and straight between the centers of the nipple end and the flange-sealing surface, along a straight line parallel to the hose length.
4. Dimensions (a) and (b) are measured to the end of a ball nose style fitting.
5. Adjustments should be made for a NAS1760 style fitting see requirements application of NAS1760 and ball nose style fitting.

FIGURE 5. Elbow fitting drop height, dimensions (a), (b), (c) and (d).

PIN: The PIN for each hose assembly shall include the prefix MS, specification number, size code letter, 2 digits for length in inches (0 - 99), 1 digit for eights of an inch (0 - 8), style letter, protective sleeve type, lock wire holes, letter or blank, and the angular alignment between the elbow fittings blank or three digits..



PIN examples:

MS8003H242FA030 specifies a 24.250 inch length, style F hose assembly with a .500 inch tube OD, a fire protective sleeve in accordance with SAE-AS1072, and 30° between the elbow fittings.

MS8003H242F030 specifies a 24.250 inch length, style F hose assembly with a .500 inch tube OD, and 30° between the elbow fittings.

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Referenced documents. In addition to MIL-DTL-25579, this document references the following:

MIL-DTL-27267	MS27384
MIL-DTL-27272	MS27385
MIL-DTL-25579/1	MS33786
MS27054	NAS1760
MS27056	SAE-AS1072
MS27058	SAE-AS1073
MS27381	SAE-AS1291
MS27382	SAE-AS1298
MS27383	SAE-AS33514

CONCLUDING MATERIAL

Custodians:
Army - MI
Navy - AS
Air Force - 99
DLA - CC

Preparing activity:
DLA - CC

(Project 4720-2016-007)

Review activities:
Army - AR, AT, EA
Navy - MC, SA, SH
Air Force – 71

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